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Edited by:

Nagib Callaos

José Vicente Carrasquero

Belkis Sánchez

Andrés Tremante

Friedrich Welsch



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Rodi, Anthony	University of Pittsburgh	USA
Roehrig, Christof	University of Applied Sciences in Dortmund	Germany
Roessling, Guido	Darmstadt University of Technology	Germany
Ruiz Rey, Francisco José	Universidad de Málaga	Spain
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Rutkowski, Jerzy	Silesian University of Technology	Poland
Saini, Subhash	NASA Amres Research Center	USA
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Singhal, Divya	Goa Institute of Management is India's	India
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Smith, Stella	Georgia Gwinnett College	USA
Snow, Mary	Embry-Riddle Aeronautical University	USA

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Stvan, Laurel	University of Texas Arlington	USA
Styron, Jr., Ronald A.	University of Southern Mississippi	USA
Su, Te-Jen	National Kaohsiung University of Applied Sciences	Taiwan
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Sureerattanan, Nidapan	Srisavarindhira Thai Red Cross Institute of Nursing	Thailand
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Traum, Maria	Johannes Kepler University	Austria
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Tuzun, Hakan	Hacettepe University	Turkey
Tzortzios, Stergios	University of Thessaly	Greece
Unalan, Halit Turgay	Anadolu University	Turkey
Unnithan, Chandana	Monash University Australia and Torrens University Australia	Australia
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Varughese, Joe	Northern Alberta Institute of Technology	Canada
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Vintere, Anna	Latvia University of Agriculture	Latvia
Wang, Ching-Huang	National Formosa University	Taiwan
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Wang, Jau-Shyong	Shu Te University	Taiwan
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Wang, Zhigang	Fort Valley State University	USA
Weeden, Elissa	Rochester Institute of Technology	USA
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Zahran, Sami	IBM Global Services	UK
Zainon Hamzah, Zaitul Azma	Universiti Putra Malaysia	Malaysia
Zogla, Irena	University of Latvia	Latvia



ADDITIONAL REVIEWERS FOR THE NON-BLIND REVIEWING

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Bälter, Olof	Royal Institute of Technology	Sweden
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The 16th International Conference on Education and Information Systems, Technologies and Applications: EISTA 2018
in the context of
The 12th International Multi-Conference on Society, Cybernetics and Informatics: IMSCI 2018



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Czech Republic	2	4.00
Egypt	2	4.00
Germany	2	4.00
Japan	2	4.00
Tanzania	2	4.00
Australia	1	2.00
Belgium	1	2.00
Brazil	1	2.00
Ecuador	1	2.00
France	1	2.00
Israel	1	2.00
Poland	1	2.00
Russian Federation	1	2.00
Sweden	1	2.00
Taiwan	1	2.00
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Foreword

Informatics and Cybernetics (communication and control) are having an increasing impact on societies and in the globalization process that is integrating them. Societies are trying to regulate this impact, and adapt it to their respective cultural infra-structures. Societies and cultures are in reciprocal co-adaptations with Information and Communication Technologies. Synergic relationships might emerge in this co-adaptation process by means of positive and negative feedback loops, as well as feedforward ones. This would make the whole larger than the sum of its parts, generating emergent properties in the parts involved as well as in the whole coming forth. The academic, private, and public sectors are integrating their activities; multi-disciplinary groups and inter-disciplinary teams are being formed, and collaborative research and development projects are being organized in order to facilitate and adequately orient the design and implementation of the feedback and the feed-forward loops, and potentially generating synergistic relationships. This phenomenon persuaded the Organizing Committee to organize The 12th International Multi-Conference on Society, Cybernetics and Informatics (IMSCI 2018) in a multi-disciplinary context along with other collocated events. Consequently, participants may focus on one discipline, while allowing them the possibility of attending conferences from other disciplines. This systemic approach stimulates cross-fertilization among different disciplines, inspiring scholars, originating new hypothesis, supporting production of innovations and generating analogical thinking.

IMSCI 2018 was organized and sponsored by the International Institute of Informatics and Systemics (IIIS, www.iiis.org), member of the International Federation of Systems Research (IFSR). The IIIS is a **multi-disciplinary organization for inter-disciplinary communication and integration**, which includes about 4000 members. Consequently, a main purpose of the IIIS is to foster knowledge integration processes, interdisciplinary communication, and integration of academic activities. Based on 1) the trans-disciplinarity of the systemic approach and its emphasis on *relationships* and *integrating* processes, and 2) the multi-disciplinary support of cybernetics' and informatics' concepts, notions, theories, technologies, and tools, the IIIS has been organizing multi-disciplinary conferences as a platform for fostering inter-disciplinary communication and knowledge integration processes.

Multi-disciplinary conferences are organized by the IIIS as support for *both intra- and inter-disciplinary* communication. Processes of intra-disciplinary communication are mainly achieved via traditional paper presentations in corresponding disciplines, while conversational sessions, regarding trans- and inter-disciplinary topics, are among the means used for inter-disciplinary communication. Intra- and inter-disciplinary communications might generate *co-regulative cybernetic loops*, via negative feedback, and *synergic* relationships, via positive feedback loops, in which both kinds of communications could increase their respective effectiveness. Figure 1 shows at least two cybernetic loops if intra- and inter-disciplinary are adequately related. A necessary condition for the effectiveness of Inter-disciplinary communication is an adequate level of *variety* regarding the participating disciplines. *Analogical thinking and learning processes* of disciplinarians depend on it; which in turn are potential sources of the creative tension required for cross-fertilization among disciplines and the generations of new hypothesis. An extended presentation regarding this issue can be found at www.iiis.org/MainPurpose.

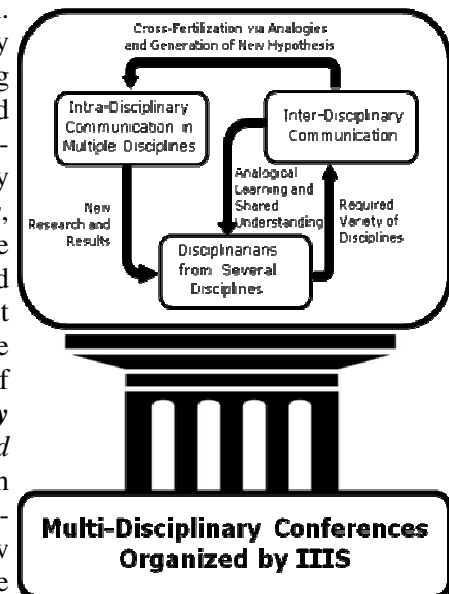


Figure 1

One of the main purposes of IMSCI 2018 is to bring together academics, professionals, and managers from the private and the public sectors, in order to share ideas, results of research, and innovative services or products, in a multi-disciplinary and multi-sector forum.

Educational technologies, socio-economic organizations, and socio-political processes are essential domains among those involved in the evolving co-adaptation and co-transformation between societies and cultures on the one hand, and between informatics and cybernetics (communication and control) on the other hand. Consequently, the main conference in the context of the IMSCI 2018 Multi-Conference is the 16th International Conference on Education and Information Systems, Technologies and Applications: EISTA 2018

The relationship between education/training and Information and Communication Technologies (ICT) is quickly intensifying and sometimes appears in unexpected forms and in combination with original ideas, innovative tools, methodologies, and synergies. Accordingly, the primary purpose of EISTA 2018 has been to bring together researchers and practitioners from both areas together to support the emerging bridge between education/training and the ICT communities.

In the context of EISTA 2018, practitioners and consultants were invited to present case studies and innovative solutions. Corporations were invited to present education/training information systems and software-based solutions. Teachers and professors were invited to present case studies, specifically developed information systems, and innovative ideas and designs. Educational scientists and technologists were invited to present research or position papers on the impact and the future possibilities of ICT in educational systems, training processes, and methodologies. Managers of educational organizations and training consultants were invited to present problems that might be solved by ICT or solutions that might be improved by different approaches and designs in ICT.

EISTA 2018 provides a forum for the presentation of solutions and problems in the application of ICT in the fields of education/training. Authors of the papers included in the proceedings provided diverse answers to the following questions:

- What is the impact of ICT in education and training?
- How ICTs are affecting and improving education and training? What networks and models are emerging?
- How are universities, schools, corporations and other educational/training organizations making use of ICT?
- What electronic tools are there to facilitate e-learning, distance education and co-operative training?

On behalf of the Organizing Committees, I extend our heartfelt thanks to:

1. The 132 members of the Program Committees from 31 countries (including the events and the special tracks organized in the context of IMSCI 2018)
2. The 305 additional reviewers, from 56 countries, for their *double-blind peer reviews*; and
3. The 141 reviewers, from 39 countries, for their efforts in making the **non-blind peer reviews**. (Some reviewers supported both: non-blind and double-blind reviewing for different

A total of 998 reviews made by 446 reviewers (who made at least one review), from 68 countries, contributed to the quality achieved in IMSCI 2018. This means an average of 5.94

reviews per submission (193 submissions were received). *Each registered author had access, via the conference web site, to the reviews that recommended the acceptance of their respective submissions.* Each registered author could also get information about: 1) the average of the reviewers evaluations according to 8 criteria, and the average of a global evaluation of his/her submission; and 2) the comments and the constructive feedback made by the reviewers, who recommended the acceptance of his/her submission, so the author would be able to improve the final version of the paper.

In the organizational process of IMSCI 2018, about 168 articles were submitted. These pre-conference proceedings include about 50 papers, from 22 countries that were accepted for presentation (46 countries taking into account the presentations in collocated events). We extend our thanks to co-chairs special tracks organizers for their support. The submissions were reviewed as carefully as time permitted; it is expected that most of them will appear in a more polished and complete form in scientific journals.

This information about IMSCI 2018 is summarized in the following table, along with the other collocated conferences:

Conference	# of submissions received	# of reviewers that made at least one review	# of reviews made	Average of reviews per reviewer	Average of reviews per submission	# of papers included in the proceedings	% of submissions included in the proceedings
WMSCI 2018	191	828	1292	1.56	6.76	103	53.93%
IMSCI 2018	168	446	998	2.24	5.94	50	29.76%
WMSCI & IMSCI 2018	359	1274	2290	1.80	6.38	153	42.62%
CISCI 2018	154	611	1311	2.15	8.51	61	39.61%
TOTAL	513	1885	3601	1.91	7.02	214	41.72%

We extend our gratitude to the co-editors of these proceedings for the hard work, energy and eagerness they have shown in organizing their conferences and preparing their respective sessions. We express our intense gratitude to Professor William Lesso (1931-2015) for his wise, timely, adequate and valuable tutoring, as well as for his eternal energy, integrity, and continuous support and advice, as the Program Committee Chair of past conferences, and as Honorary President of WMSCI 2018, as well as for being a very caring old friend and intellectual father to many of us. We also extend our gratitude to Professor Belkis Sánchez, who brilliantly managed the organizing process.

We would like also to extend our gratefulness to Professor Gradon Gill and Dr. Jeremy Horne for their continuous support in the conferences they participated in along the last 12 years as well as in the conferences they were not able to participate. In both cases: their advices and the kind of care they provided us with are highly valued and appreciated.

We also grateful to the following scholars, researchers, and professionals who accepted to deliver plenary workshops and/or to address the audience of the General Joint Plenary Sessions with keynote conferences.

Workshops and Conversational Sessions

Professor T. Grandon Gill, University of South Florida, USA, College of Business, Director of the Doctorate in Business Administration, Editor-in-Chief of Informing Science, Editor of the Journal of IT Education, Founding Editor of Journal of Information Technology Education.

Professor William Swart, East Carolina University, USA, FMR. Dean of Engineering and Technology at New Jersey Institute of Technology, Provost and Vice President for Academic Affairs at East Carolina University, Researcher and Consultant at NASA's Space Shuttle.

Plenary Keynote Speakers

Professor Shigehiro Hashimoto, Kogakuin University, Japan. Councilor and Dean, Faculty of Engineering, Former Associate to the University President. Doctor of Engineering and Doctor of Medicine. Biomedical Engineering.

Professor Matthew E. Edwards, Alabama A&M University, USA. Professor of Physics and Former Dean of the School of Arts and Sciences. Director of IHSEAR: Institute of Higher Science Education, Advancement and Research.

Professor Dr.-Ing. Albrecht Rothermel, Ulm University, Germany. Deputy Director of the Institute of Microelectronics. Former Editor of the IEEE JSSC, and TPC-Chair of the IEEE ICCE-B.

Dr. Russell Jay Hendel, Towson University, USA, Dept. of Mathematics. Researcher in Discrete Number Theory, the Theory of Pedagogy, Applications of Technology to Pedagogy, and the Interaction of Mathematics and the Arts.

Dr. Bernard Wallner, University of Vienna, Austria, Department of Anthropology, Co-leader of the working group Anthropological Economics & Demography.

Professor Ran Giladi, Ben-Gurion University of the Negev, Israel, Faculty of Engineering Sciences, Department of Communication Systems Engineering.

Professor Jan Detand, Ghent University, Belgium, Faculty of Engineering and Architecture, Industrial Engineering Design at Industrial Design Center.

Professor T. Grandon Gill, University of South Florida, USA, College of Business. Director of the Doctorate in Business Administration. Editor-in-Chief of Informing Science. Editor of the Journal of IT Education, Founding Editor of Journal of Information Technology Education.

Professor Dov Lichtenberg, Tel Aviv University, Israel, Former Dean of Medicine. Professor Emeritus since 2011. Post Doc in Chemical Biophysics at Caltech, USA.

Professor William Swart, East Carolina University, USA. FMR. Dean of Engineering and Technology at New Jersey Institute of Technology. Provost and Vice President for Academic Affairs at East Carolina University. Researcher and Consultant at NASA's Space Shuttle.

Dr. Mario Lamanna, Evoelectronics, Italy and Selex-SI, USA. Senior Scientist and Project Leader Projects in the fields of Defense and Security.

Professor Ariyoshi Kusumi, Chukyo University, Japan, School of International Liberal Studies, Environmental Science. Visiting Scientist at The Regional Environmental Center for Central and Eastern Europe in Hungary.

Dr. Kevin Foltz, Institute for Defense Analyses, USA, Information Technology and Systems Division. Independent Technical Analyst for the Department of Defense.

Dr. Jyothi Thalluri, University of South Australia, School of Pharmacy and Medical Sciences. 2015 Award Winner of Student Nominated Excellent Educator. Endeavour Executive Award Winner - Australian government.

Professor Oleg I. Redkin, Saint Petersburg State University, Russia, Faculty of African and Asian Studies. Head of Arabic Studies.

Professor Olga Bernikova, Saint Petersburg State University, Russia, Research Laboratory for Analysis and Modeling of Social Process. Member of the Editorial board of the journal “Islam in the Modern World”.

Professor Margit Scholl, Technical University of Wildau [FH], Germany, Faculty of Economics, Computer Science, Law, Business, and Administrative Informatics, Received a research prize from TH Wildau.

Dr. Pawel Poszytek, Foundation for the Development of the Education System, Poland. General Director, Member of working groups of the European Commission and the Ministry of National Education of Poland.

Professor Alfredo Soeiro, University of Porto, Portugal, Department of Civil Engineering. Pro-Rector of University of Porto. Founder of EUCEN, RECLA and AUPEC. Vice president of EUCEN and SEFI, President of IACEE, AUPEC and of SEFI. Secretary General of AECEF and of IACEE Council.

Professor Cécile Gardies, National Higher School of Agricultural Education Training, France. Director of the IDC collection (Information-Documentation-Communication) to the Cépades editions. Co-director of the Agora Collection Research Editions Educagri.

Professor Laurent Fauré, National Higher School of Agricultural Education Training, France. Head of Education and Pedagogy Department. Associate Professor in Agricultural Equipment Education.

Dr. Sylvia Mirry, University of Bologna, Italy, Faculty of Sciences, Department of Computer Science and Engineering. Former Visiting Researcher at University of Toronto, Ontario, Canada.

Bruce Leybourne, MS. Institute for Advance Studies on Climate Change (IASCC), USA, Research Director and Principal Investigator, MS in Geology from University of Southern Mississippi, USA, Former Navy tenure at the U.S. Naval Oceanographic Office, NASA's Stennis Space Center.

Professor Sami Shaban, United Arab Emirates University, College of Medicine and Health Sciences, Medical Education Department Medical Informatics.

Professor Akira Ishii, Tottori University, Japan, Department of Applied Mathematics and Physics. Council member of Complex Systems Society.

Drs. Nozomi Okano, Tottori University, Japan, Ph.D candidate. Department of Applied Mathematics and Physics. University President of NKDesign.

Ashley Dean, MA, Leeds Beckett University, UK. Senior Lecturer in Animation, Design and Broadcast Media. Research in experimental film making, animation and more formal classroom teaching.

Drs. Lars König, M.SC, University of Münster, Germany. Doctoral Student in the DFG-funded Research Training Group. Research Assistant at the Institute for Psychology in Education.

Profesora Gabriela Vilanova, Universidad Nacional de la Patagonia Austral, Argentina. Directora del Grupo de Investigación: Innovación en Procesos de Enseñanza y Aprendizaje en Ambientes Virtuales de Aprendizaje.

Professor E. Bolaños-Rodríguez, Universidad Autónoma del Estado de Hidalgo, México. Escuela Superior de Tizayuca. Electroquímica, Ciencias Ambientales, Pedagogía, Computación, Tecnologías de la Información y las Comunicaciones (TIC), Metodología de la Investigación.

Profesor Jorge Ruben Varas, Universidad Nacional de la Patagonia Austral, Argentina. Ergonomía y Psicosociología del Trabajo . Co-Director de Proyectos de Investigación relacionados a Educación en Entornos Virtuales de Aprendizaje.

Profesor David González Ortega, Universidad de Valladolid, España, Departamento de Teoría de la Señal y Comunicaciones e Ingeniería Telemática en la E.T.S. de Ingenieros de Telecomunicación. Grupo de Telemática e Imagen (GTI) en los campos de Redes Neuronales, Visión Artificial, y Sensores Fisiológicos.

Invited Sessions Organizers

Professor Shigehiro Hashimoto, Kogakuin University, Japan. Councilor and Dean, Faculty of Engineering, Former Associate to the University President. Doctor of Engineering and Doctor of Medicine. Biomedical Engineering.

Professor Dr. oec Natalja Lace, Riga Technical University, Faculty of Engineering, Economy and Management. Head of Department of Corporate Finance and Economics.

Professor Dr. oec Elina Gaile-Sarkane, Dean of the Faculty of Engineering, Economy and Management.

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Our gratefulness is also extended to the organizations that provided scientific, academic, professional, or corporate co-sponsorships. The following are among these organizations:



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Dr. Jeremy Horne and
 Dr. Nagib Callaos (www.iiis.org/Nagib-Callaos)

IMSCI 2018 General Co-Chairs

VOLUME I

CONTENTS

Contents	i
Interdisciplinary Research, Education, and Communication: IDREC 2018	
Butler Carroll, Traci; Philips Jr., Billy (USA): "Texas Tech University Health Sciences Center Frontiers in Telemedicine Simulation Lab and Certificate Course: Facility and Curriculum Development"	1
Chavarría-Barrientos, Dante; Miranda, Jhonattan; Cortés, Daniel; Molina, Arturo (Mexico): "Experiences in Product, Process and Manufacturing Systems Development in Industrial Engineering Courses: The Integrated Manufacturing System Course as Case Study"	7
Detand, Jan; Emmanouil, Marina (Belgium): "Multiple Research Perspectives as a Paradigm to Co-Create Meaningful Real-life Experiences"	14
Easton, Diana (USA): "A Methodology to Integrate Regulatory Expertise, Research and Education to Accelerate Biomedical Device Translation"	18
Farouk, Hesham (Egypt): "Setting the Scene for 2025 Video Technology Trends"	23
Giladi, Ran (Israel): "A Tale of Interdisciplinary Studies: Communication Systems Engineering"	29
González Mariño, Julio César; Cantú Gallegos, Ma. de Lourdes; Camacho Cruz, Hugo Eduardo; Rosales Camacho, José Alejandro (Mexico): "Redesigning the Bartle Test of Gamer Psychology for its Application in Gamification Processes of Learning"	35
Kusumi, Ariyoshi; Kobayashi, Kayoko (Japan): "An Educational Framework for Decision-Making and Problem-Solving"	41
Leung, Tiffany; Zulkernine, Farhana; Isah, Haruna (Canada): "The Use of Virtual Reality in Enhancing Interdisciplinary Research and Education"	46
Leybourne, Bruce (USA): "Hurricane Irma 2017: Relationships with Lightning, Gravity, and Earthquakes"	52
Case Studies and Methodologies	
Abdalla, Areeg (Egypt): "Different Methodologies in Treating Uncertainty"	59
Ahmad, Norita; Catalan Opulencia, Maria Jade; Fadahunsi, Akinola O.; Elamin, Suraya (United Arab Emirates): "Sustainable Initiatives on Environmental Issues: A Case of UAE"	65

Catalan Opuencia, Maria Jade; Misajon, Mervyn J.; Pornan, Mark Anthony C.; Mir, Mahmood (United Arab Emirates): "Best in Class Paradigm: A Case of Filipino Human Capital Leaders in Selected Organizations in United Arab Emirates"	70
Das, Aditya; Doelling, Kris; Sevil, Hakki Erhan; Greer, Julianne (USA): "Robot Theatre to Boost Excitement, Engagement, and Expression (E3) of STEM"	76
Lara Gracia, Marco A. (USA): "Optimization of Container Port Operations Using Data Envelopment Analysis"	82
Lykartsis, Athanasios; B-Jahromi, Ali; Mylona, Anastasia (UK): "Automated Natural Ventilation and Lighting Strategy for a Residential Building under Extreme Hot Weather"	88
Saquicela, Victor; Baculima, Fernando; Orellana, Gerardo; Orellana, Marcos; Piedra, Nelson; Espinoza, Mauricio; Vanegas, Pablo (Ecuador): "A Subject Syllabus Similarity Analysis to Address Students Mobility Issue"	93
Globalization and Informatics/Cybernetics	
Aissaoui Mehrez, Hassane; El Omri, Othmane (France): "The Crypto-Agility Properties"	99
Impact of Informatics and Cybernetics on Societies and Cultures	
Orantes-Jiménez, Sandra-Dinora; Reyes-Castellanos, María-Elena; Sun, Guohua (Mexico): "Extension to the Technology Acceptance Model (TAM): For Elderly"	104
Informatics and Society. (PISTA 2018)	
Moorning, Kim (USA): "Using Informatics and Technology Practices for Academic Performance Review"	110
Interdependencies between Society and Information and Communication Technologies	
Scholl, Margit; Fuhrmann, Frauke (Germany): "How Can We Succeed in Attracting (Young) Women to the Promising Careers of Information Security and Computing? – A Project Testing an Experience-Driven Approach"	116
Socio-Political Regulations of Informatics and Cyber-Technologies	
Wu, Jintao; He, Yue (China): "Research on Prevention and Control of Internet Illegal Trading by Using Instant Messaging Tools"	120
Academic Informing Science and Engineering	
Beconcini, Maria Luisa; Cioni, Paolo; Croce, Pietro; Formichi, Paolo; Landi, Filippo; Mochi, Caterina (Italy): "Non-Linear Static Analysis of Masonry Buildings under Seismic Actions"	126
Croce, Pietro *; Formichi, Paolo *; Landi, Filippo *; Marsili, Francesca ** (* Italy, ** Germany): "Influence of Climate Change on Extreme Values of Rainfall"	132
Authors Index	139



Pages 1-138 are not included in this book preview.

To view the papers, please, click the “Home” button at the top of this page, and then, click the “Papers” link for this volume.



AUTHORS INDEX

VOLUME I

Abdalla, Areeg	59	Mir, Mahmood	70
Ahmad, Norita	65	Miranda, Jhonattan	7
Aissaoui Mehrez, Hassane	99	Misajon, Mervyn J.	70
Baculima, Fernando	93	Mochi, Caterina	126
Beconcini, Maria Luisa	126	Molina, Arturo	7
B-Jahromi, Ali	88	Moorning, Kim	110
Butler Carroll, Traci	1	Mylona, Anastasia	88
Camacho Cruz, Hugo Eduardo	35	Orantes-Jiménez, Sandra-Dinora	104
Cantú Gallegos, Ma. de Lourdes	35	Orellana, Gerardo	93
Catalan Opulencia, Maria Jade	65; 70	Orellana, Marcos	93
Chavarría-Barrientos, Dante	7	Philips Jr., Billy	1
Cioni, Paolo	126	Piedra, Nelson	93
Cortés, Daniel	7	Pornan, Mark Anthony C.	70
Croce, Pietro	126; 132	Reyes-Castellanos, María-Elena	104
Das, Aditya	76	Rosales Camacho, José Alejandro	35
Detand, Jan	14	Saquicela, Victor	93
Doelling, Kris	76	Scholl, Margit	116
Easton, Diana	18	Sevil, Hakki Erhan	76
El Omri, Othmane	99	Sun, Guohua	104
Elamin, Suraya	65	Vanegas, Pablo	93
Emmanouil, Marina	14	Wu, Jintao	120
Espinoza, Mauricio	93	Zulkernine, Farhana	46
Fadahunsi, Akinola O.	65		
Farouk, Hesham	23		
Formichi, Paolo	126; 132		
Fuhrmann, Frauke	116		
Giladi, Ran	29		
González Mariño, Julio César	35		
Greer, Julianne	76		
He, Yue	120		
Isah, Haruna	46		
Kobayashi, Kayoko	41		
Kusumi, Ariyoshi	41		
Landi, Filippo	126; 132		
Lara Gracia, Marco A.	82		
Leung, Tiffany	46		
Leybourne, Bruce	52		
Lykartsis, Athanasios	88		
Marsili, Francesca	132		